Course Description: CVEEN 5/6510 Highway Design

Offered Spring

Catalog Data

Design and layout of highway systems: horizontal and vertical alignment, phasing, design of intersections, earthwork optimization.
3 Credits

Textbook

Instructor Coordinated Compilation available from Copy Centers

Coordinator: Joe Perrin

Goals:

This course is designed to provide insight into transportation engineering design problems where the students will develop techniques for problem solving.

Prerequisites

CVEEN 3520 or instructors consent

Topics

- Surveying requirements and right-of-way acquisition
- Utility design and consideration
- Review road geometry and features (horizontal / vertical curves and super-elevation)
- Review drainage/soils/pavement requirements
- Road design standards
- Signal standards/concepts/common concerns
- Geometric road and signal design
- Construction material and installation method
- Project site oversight requirements
- Inspection
- Cost estimating and the bid process

Computer Usage

The course will require design projects using a CAD software package. AutoCAD or Microstation are recommended but other CAD design packages can be used with approval of instructor. Most CAD work will be outside of the class time and constitutes the bilk of the course homework.

Laboratory Projects

- Site Visits
- Guest Speakers on the various topics
- Heavy Equipment Demonstration
- Signal Controller

Course Content:

The methods introduced are based on industry standards set forth by national, state and local organizations. The class will provide a basic understanding of the type of highway design issues required of a Transportation Engineer.